



George C. Marshall Space Flight Center
Marshall Space Flight Center, Alabama 35812



Materials and Processes
Laboratory, EM01

Metals Engineering
Branch, EM30

EM30-WI-002

02/11/2005

ORGANIZATIONAL WORK INSTRUCTION

EM30

EM30 WORK TRACKING, PRODUCT TRACEABILITY AND CONTROL, AND DATA CONTROL

**RELEASE
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DOCUMENT HISTORY LOG

Revision	Date	Originator	Description
Baseline	02-11-2005	T. Vaughn	Document rebaselined due to reorganization of Departments and Laboratories at the Center

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1 SCOPE

- 1.1 **SCOPE:** This document shall provide work tracking, product traceability and control, and data control procedures and requirements for the Materials and Processes Laboratory, Metals Engineering Branch within the scope defined by MPD 1280.1, "Marshall Management Manual."
- 1.2 **PURPOSE:** This document shall establish the procedure for work tracking, product traceability and control, and data control in the Metals Engineering Branch and its component teams.
- 1.3 **APPLICABILITY:** This document shall apply to the Materials and Processes Laboratory, Metals Engineering Branch and its component teams.

2 APPLICABLE DOCUMENTS

- 2.1 ***GEORGE C. MARSHALL SPACE FLIGHT CENTER (MSFC) POLICY DIRECTIVES AND WORK INSTRUCTIONS:***
 - MPD 1280.1, "Marshall Management Manual"
 - MPD 2190.1 "Marshall Export Control Program"
 - MPR 1280.4, "MSFC Corrective Action System"
 - MPR 1280.5, "MSFC ALERT Processing"
 - MPR 1410.1, "Document and Data Control of Organizational Issuances"
 - MPR 1441.1, "Control of Quality Records"
 - MPR 4000.1, "Control of Customer Supplied Product"
 - MPR 6410.1, "Handling, Storage, Packaging, Preservation and Delivery"
 - MPR 8040.2, "Product Identification and Traceability"
 - MPR 8730.1, "Inspection and Testing"
 - MPR 8730.3, "Control of Non-Conforming Product"
 - MPR 8730.5, "Control of Inspection, Measuring, and Test Equipment"
- 2.2 ***NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA) POLICY DIRECTIVES AND WORK INSTRUCTIONS:***
 - NPR 2810.1, "Security of Information Technology"

3 DEFINITIONS

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3.1 **DEFINITIONS** shall apply as found in all documents cited in Section 2.

4 INSTRUCTIONS

4.1 **GENERAL:** The Metals Engineering Branch shall document and control work performed, trace and control products accepted and generated, and control data produced within the Branch.

4.2 **WORK REQUEST AND SUBMISSION:** Customer requests for work shall be documented on Organizational work request forms and/or databases.

4.2.1 Work request forms shall be made available through the website (<http://ed33mmtfa/PublicMMTF/WorkRequest.aspx>) for the Material Diagnostics Team, and the Metallic Materials Engineering Team. The work request forms for the Process Development Team will be available at the Organization's website (<http://maptis.nasa.gov/em30/em30masterlist.html>)

4.2.2 Work request forms shall be filled out by the Customer and/or Organizational personnel.

4.2.2.1 The Customer shall note any special requirements on the work request form.

4.2.2.2 Minimum required information noted on the work request form shall be completed before submission.

4.2.3 The Customer shall supply all samples or parts necessary for accomplishment of the requested work.

4.2.3.1 The Customer shall label each sample or part, submitted for work, with unique identifying numbers.

4.2.3.2 Organizational personnel shall maintain the sample identification during processing in accordance with MPR 8040.2.

4.2.3.3 Organizational personnel shall control Customer supplied products in accordance with the requirements of MPR 4000.1.

4.2.3.4 Organizational personnel shall store all Customer supplied materials with the work request form, in a staging area, prior to work initiation.

4.2.3.5 A copy of the work request form shall accompany the materials during processing.

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- 4.3 **WORK REQUEST REVIEW AND APPROVAL:** Work requests shall be reviewed by Organizational management or designee and either approved or disapproved.
- 4.3.1 The Organizational management or designee shall assign approved work requests to Organizational personnel who shall be responsible for work completion.
- 4.3.2 The Organizational management or designee shall specify on the work request form how data and/or products are to be released to the Customer:
- 4.3.2.1 Direct data/product release shall be interpreted to mean that direct reporting to the Customer is allowed without further Organizational management or designee review or approval.
- 4.3.2.2 Indirect data/product release shall be interpreted to mean that review and approval of data and/or products are required before release to the Customer.
- 4.3.3 After approval and assignment, Organizational personnel shall enter the required work request information in the designated database.
- 4.3.3.1 A unique work number shall be assigned to the work request and placed on the work request form.
- 4.3.3.2 Organizational personnel assigned to perform work on the submitted items shall be responsible for control and traceability of Customer supplied materials during processing, in accordance with MPR 4000.1 and MPR 8040.3, respectively.
- 4.3.4 The Organizational management or designee may elect to disapprove work that is not within the scope of the Organizational Charter.
- 4.3.5 Disapproved work requests shall be returned to the Customer with all submitted materials.
- 4.4 **WORK ACCOMPLISHMENT:** Organizational personnel shall accomplish the requested work.
- 4.4.1 Work tracking and sample traceability shall be kept through quality records of work in accordance with the requirements of MPR 8040.3.
- 4.4.2 All quality records shall be traceable to the original work request number.
- 4.4.3 Discrepancies and anomalies relative to the data or products generated shall be noted on the appropriate quality records. (e.g., tensile test bar broke outside the gage marks, etc.).

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- 4.5 **WORK REVIEW:** Data and/or products shall be reviewed for compliance with Customer requirements, completeness, and accuracy, in accordance with the requirements of MPR 8730.1.
- 4.5.1 Organizational personnel responsible for work completion shall review all data/products before release to Organizational management and/or the Customer.
- 4.5.2 The Organizational management or designee shall review data, Organizational memoranda, reports, and products that are indirectly reported to the Customer.
- 4.5.3 Non-conforming items, and corrective and preventative actions relative to the work accomplished shall be dispositioned in accordance with the requirements of MPR 8730.3, MPR 1280.4, and MPR 1280.5, respectively.
- 4.6 **DATA/PRODUCT APPROVAL:** After review of the data/products, the work shall be approved before release to the Customer.
- 4.6.1 Primary approval for the release of data/products shall always come from the Organizational personnel responsible for work completion.
- 4.6.2 Organizational Management or designee shall be responsible for approving or disapproving data/products for indirect release to the Customer.
- 4.6.3 Disapproved work that is either incomplete or unsatisfactory shall be returned to the responsible Organizational personnel for completion.
- 4.7 **DATA/PRODUCT RELEASE:** Data/products shall be released to the Customer either directly or indirectly:
- 4.7.1 Proper handling, storage, packaging, preservation, and delivery of completed data and/or products shall be accomplished by Organizational personnel assigned to complete the requested work in accordance with MPR 6410.1.
- 4.7.2 Direct data/product release shall require prior approval by Organizational management or designee.
- 4.7.3 Direct release of the data and/or product to the Customer shall be accomplished in one of three ways:
- 4.7.3.1 E-mail.
- 4.7.3.2 Verbally.

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- 4.7.3.3 Providing a copy of the data and/or the finished product to the Customer.
- 4.7.4 Indirect data/product release shall require review and approval of data/products by Organizational management or designee before release to the Customer.
- 4.7.5 Indirect release of the data and/or product to the Customer shall be accomplished three ways:
 - 4.7.5.1 E-mail.
 - 4.7.5.2 In writing via organizational memorandum.
 - 4.7.5.3 Providing a copy of the data and/or the finished product to the Customer.
- 4.7.6 The final release of all data/products shall be documented on the work request form and the work request closed.
- 4.7.7 **PUBLICATION OF DATA:** Organizational management or designee shall approve materials for general release and publication and shall be in accordance with MPD 2190.1 if applicable.
- 4.8 **CONTROL OF QUALITY RECORDS:** Quality records shall be maintained in accordance with MPR 1441.1.
 - 4.8.1 All quality records compiled in completion of a work request shall be archived and maintained at the Branch/Team level by the Organization that generated it.
 - 4.8.2 Archived data shall be stored in a centralized location that is accessible by Organizational personnel.
 - 4.8.3 Archived data shall be traceable to the original work request.
 - 4.8.4 The quality records listing (which includes retention schedules for documents) shall be listed on the master list of quality documents.
- 4.9 **MATERIAL DISPOSITION AT THE END OF WORK:**
 - 4.9.1 Final products or analyzed samples shall be returned to the requester whenever possible.
 - 4.9.2 Special requests may be made by the Customer to destroy or recycle submitted materials. Customers shall provide hazardous materials information, if applicable.

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5 NOTES

- 5.1 ***DIRECT DATA REPORTING*** shall allow for technical interchanges between the Organizational personnel and the Customer to improve the application and timely delivery of both products and services. (Ref. 4.3.2.1)
- 5.2 ***BOTH DIRECT AND INDIRECT DATA REPORTING*** shall be allowable under one work request. Customers may want to see raw data as work progresses, but the final report and memorandum shall be reviewed and approved by Organizational management or designee. (Ref. 4.7)
- 5.3 Verbal or e-mail reporting of quality record information shall not be considered a quality record in and of itself. Only the referenced quality records shall be saved for archival purposes. (Ref. 4.7.3.1 and 4.7.5.1)

6 SAFETY PRECAUTIONS AND WARNING NOTES

- 6.1 ***NOT APPLICABLE.***

7 APPENDICES, DATA, REPORTS, AND FORMS

- 7.1 Not Applicable

8 QUALITY RECORDS

- 8.1 ***WORK REQUEST FORMS, CALIBRATION LOGBOOKS, AND DATABASE FILES*** shall be maintained and archived by the Branch and/or Team that created them for a minimum of 10 years.
- 8.2 ***QUALITY RECORDS GENERATED BY THIS ORGANIZATIONAL WORK INSTRUCTION*** include the following forms and logbooks:
 - “EM30 Electronic Work Request System (EWRS) Form”
 - “EM30 Failure Analysis Calibration Logbook”
 - “EM30 Welding Work Request Logbook”
 - “EM30 Welding Work Request Form”
 - “EM30 Welding Calibration Logbook”
 - “EM30 Thermal Spray Facility Work Request Logbook”
 - “EM30 Thermal Spray Facility Work Request Form”
 - “EM30 Temperature Controller & Thermister Probe Logsheets”

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“EM30 Micrometer and Caliper Verification Logsheet”

- 8.3 ***BACKUP COPIES OF ELECTRONIC QUALITY RECORDS*** shall be kept in accordance with NPR 2810.1.
- 8.3.1 The Document Control Custodian (DCC) or designated backup administrator shall back up data to a server that is separate from the file server used to store the Branch's electronic quality records.
- 8.3.2 A complete backup of all electronic quality records stored on the file server shall be compiled on magnetic tape semi-annually and maintained for a minimum of 2 years.
- 8.3.3 Incremental backups of new and changed electronic quality records shall be compiled on magnetic tape weekly and maintained for a minimum of 2 years.
- 8.3.4 The backup server and tapes shall be located in a secure area controlled by key card access.
- 8.4 ***THE QUALITY RECORDS LISTING*** shall be updated by the DCC to include all quality records produced and maintained by the Branch and its component teams, in accordance with MPR 1410.1.
- 8.5 ***DISCONTINUED RECORDS*** shall be maintained for a minimum of 10 years, since the types and function of Organizational quality records may change over time.
- 8.6 A ***QUALITY RECORDS LISTING*** shall be maintained on the website (<http://maptis.nasa.gov/em30/em30masterlist.html/>) to allow review of all the Branch's quality records and their disposition and retention schedules.

9 TOOLS, EQUIPMENT, AND MATERIALS

- 9.1 ***TOOLS AND EQUIPMENT*** that require periodic calibration in order to be used in the performance of requested work shall be calibrated to known standards in accordance with MPR 8730.5.
- 9.2 A ***CALIBRATION LOGBOOK*** for equipment requiring local calibration shall be maintained by each Branch and/or team, including the following information:
- 9.2.1 Equipment name.
- 9.2.2 Equipment location.
- 9.2.3 MPR 8730.5 calibration level designation.
- 9.2.4 Last calibration date.

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9.2.5 Calibration interval.

9.2.6 Calibration contact.

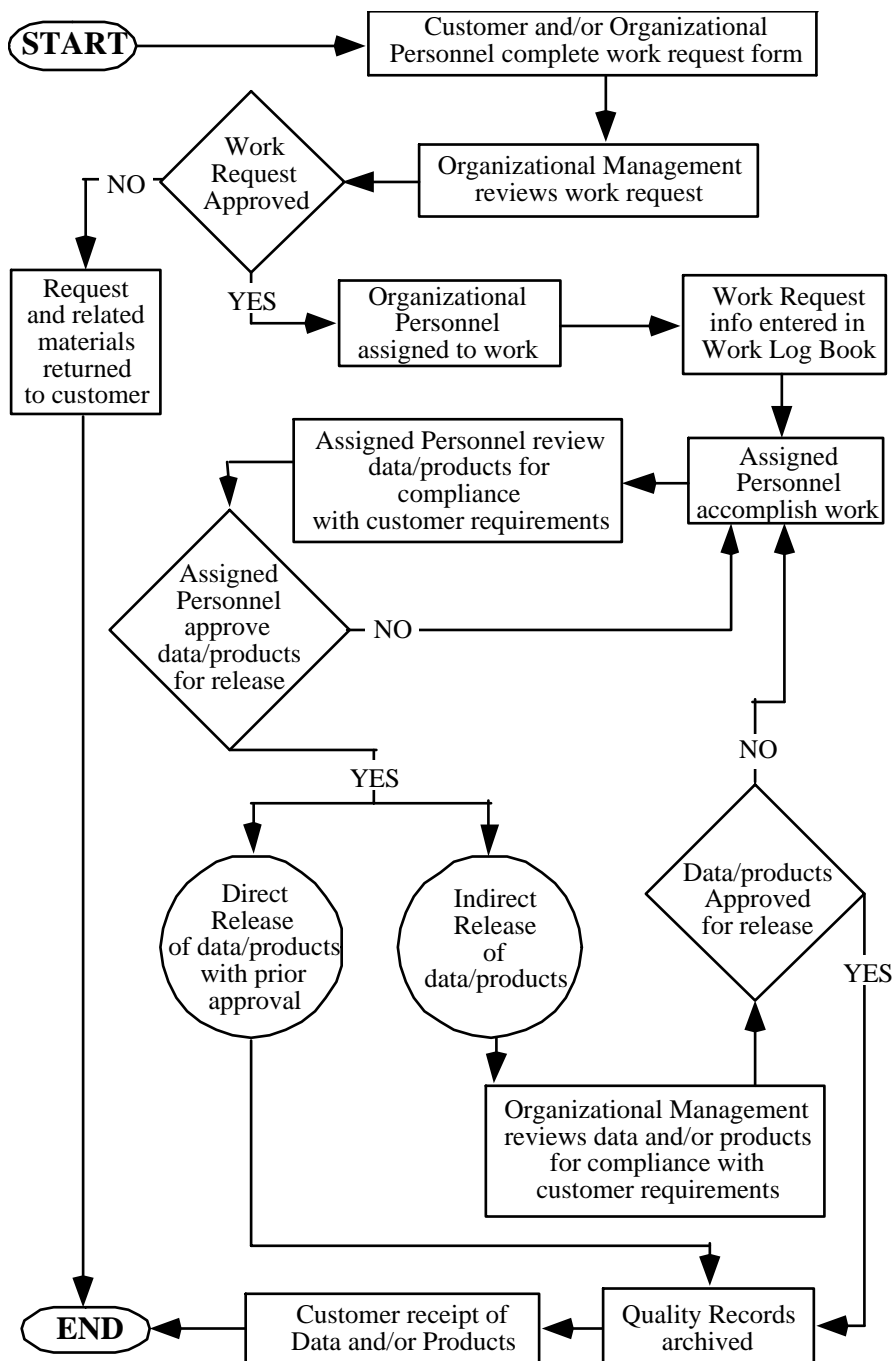
10 PERSONNEL TRAINING AND CERTIFICATION

10.1 *NOT APPLICABLE.*

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11 FLOW DIAGRAM



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